



Curriculum Intent – Knowledge Builder

Computing - Primary Curriculum

Subject Intent Statement

At St. Georges we want to provide the children with rich deep learning experiences that balance all aspects of computing.

With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems.

At St Georges, we teach all three elements of computing: Computer Science, Information Technology and Digital Literacy in which pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology– at a level suitable for the future workplace and as active participants in a digital world.

EYFS computing is centred around play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving. Technology in the Early Years can mean:

- taking a photograph with a camera or tablet
- searching for information on the internet
- playing games on the interactive whiteboard
- using a Beebot
- exploring an old typewriter or other mechanical toys
- watching a video clip
- listening to music

Allowing children the opportunity to explore technology in this carefree and often child-led way, means that not only will they develop a familiarity with equipment and vocabulary but they will have a strong start in Key Stage 1 Computing and all that it demands.

Year 1	Year 2	Year 3	Year 4
<p>Key Knowledge Computer Science</p> <p>Pupils should begin to be taught to:</p> <p>1a understand what algorithms are; how they are implemented as programs on digital devices; and that programs work by following precise and careful instructions</p> <p>1b create and debug simple programs</p> <p>1c use logical reasoning to begin to predict the behaviour of simple programs</p> <p>Information Technology</p> <p>Pupils should be taught to:</p> <p>1d use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Digital Literacy</p> <p>Pupils should be taught to:</p> <p>1e recognise common uses of information technology beyond school</p>	<p>Key Knowledge Computer Science</p> <p>Pupils should be taught to:</p> <p>1a understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <p>1b create and debug simple programs</p> <p>1c use logical reasoning to predict the behaviour of simple programs</p> <p>Information Technology</p> <p>Pupils should be taught to:</p> <p>1d use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Digital Literacy</p> <p>Pupils should be taught to:</p> <p>1e recognise common uses of information technology beyond school</p>	<p>Key Knowledge: Computer Science</p> <p>Pupils should begin to be taught to:</p> <p>2a design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>2b use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>2c use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>2d understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration</p> <p>Information Technology</p> <p>Pupils should begin to know how to:-</p>	<p>Key Knowledge: Computer Science</p> <p>Pupils should consolidate their understanding of how to:</p> <p>2a design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>2b use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>2c use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>2d understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration</p> <p>Information Technology</p> <p>Pupils should know how to:-</p>

<p>1f use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>1f if use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>2e use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 2f select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>Digital Literacy Pupils should consolidate their understanding of how to 2g use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>	<p>2e use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 2f select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>Digital Literacy Pupils should know how to:- 2g use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>
<p>Key Skills Overarching Problem solving, Following instructions Willingness to do and undo</p> <p>Subject specific Using technology Use a wide range of technology and describe how it works in a variety of different contexts.</p> <p>Select the appropriate piece of technology for a particular purpose and communicate this.</p> <p>Begin to save their work to a folder and retrieve it when needed.</p> <p>Begin to edit and copy information using a variety of media. Film short scenes & edit with others.</p> <p>Algorithms and programs Explore an on screen turtle and navigate it around a course or grid and/or draw shapes by inputting a sequence of instructions.</p> <p>Begin to understand that the on screen turtle can be directed through the use of text.</p>	<p>Key Skills Overarching Problem solving, Following instructions, Willingness to do and undo, Developing resilience and independence</p> <p>Subject specific Using technology Select the appropriate piece of technology for a particular purpose and communicate this.</p> <p>Save their work to a folder and retrieve it when needed.</p> <p>Understand how to edit and copy information using a variety of media. Film short scenes & edit with others.</p> <p>Algorithms and programs Use an on screen turtle and navigate it around a course or grid and/or draw shapes by inputting a sequence of instructions.</p> <p>Understand that the on screen turtle can be directed through the use of text. Enter information into a basic computer simulation and explore the effects of changing the variables in simulations and discuss the benefits of using these simulations.</p> <p>Discuss the use of simulations and compare with reality.</p> <p>Data retrieving and organising</p>	<p>Key Skills: Overarching Resilience, Problem solving, Experimentation, Research, Developing communication using a variety of medium</p> <p>Subject specific Using technology Know what the term browser is and can they use it to navigate a variety of programmes. Use tabbed browsing to open two or more web pages at the same time. Know how to use a wide variety of technology to suit a particular purpose.</p> <p>Algorithms and programs Use a computer to create basic applications, investigating how different variables can be changed Explore some simulations and evaluate them</p> <p>Data retrieving and organising Create a simple branching database, identifying objects and questions to classify data. Work as a group to collect data on a pre-prepared data collection template.</p> <p>E-Safety As Key stage 1 plus Understand and articulate that social networking sites carry risk.</p>	<p>Key Skills: Overarching Resilience, Problem solving, Experimentation Research, Confident communication in a variety of medium</p> <p>Subject specific Using technology Know what the term browser is and can they use it to navigate a variety of programmes. Use tabbed browsing to open two or more web pages at the same time. Know how to use a wide variety of technology to suit a particular purpose. Contribute to an online class blog. Open a variety of links and use them.</p> <p>Algorithms and programs Use a computer to create basic applications, investigating how different variables can be changed. Begin to use software to represent 3D objects or items. Explore some simulations and evaluate them.</p> <p>Data retrieving and organising Create a simple branching database, identifying objects and questions to classify data. Work as a group to collect data on a pre-prepared data collection template. Explain what a spreadsheet is. Use the terms cells, rows and columns.</p>

<p>Data retrieving and organising Begin to present their data in different ways. Use a branching database to answer questions with help.</p> <p>E-Safety Follow the school's safer internet rules. Begin to know that everything on the internet is not true. Recognise that there are other people on the internet and this affects how they should use it. Know how to act if they find inappropriate content online. Tell a trusted adult if someone they don't know tries to contact them via the internet. Understand that they should only open an email from someone they know. Use the internet safely for learning and communicating with others. Recognise advertising on websites and learn to ignore it.</p> <p>Communicating / presentations Send individual emails in a controlled environment and reply. Develop speed when typing and use a simple document with increasing control. Word process work, changing the font, font size, colour. Cut, copy and paste an image, text box, word art and clipart onto a document. Format their text to refine and improve. e.g underline, italics, bold.</p>	<p>Present their data in different ways. Use a branching database to answer questions. Amend teacher prepared graphs.</p> <p>E-Safety Follow the school's safer internet rules. Evaluate websites and know that everything on the internet is not true. Recognise that there are other people on the internet and this affects how they should use it. Know how to act if they find inappropriate content online. Tell a trusted adult if someone they don't know tries to contact them via the internet. Understand that they should only open an email from someone they know. Send and receive emails safely. Understand why passwords shouldn't be shared. Use the internet safely for learning and communicating with others. Recognise advertising on websites and learn to ignore it.</p> <p>Communicating / presentations Learn that email is used beyond school Send individual emails in a controlled environment and reply. Develop speed when typing and use a simple document with increasing control. Word process work, changing the font, font size, colour. Cut, copy and paste an image, text box, word art and clipart onto a document. Format their text to refine and improve. e.g underline, italics, bold. Produce an interactive presentation using a range of media. E.g. slide transition/ sound effects etc.</p>	<p>Understand the benefit of developing a nickname for online use. Behave appropriately online. Recognise that cyber bullying is unacceptable. Recognise the dangers of communicating via a variety of devices such as Xbox live, PSP, phones etc. Explain the difference between online communication tools used in school and those used at home. Understand the need for caution when using the internet to search for images and what to do if they find an unsuitable image. Recognise that information on the internet may not be complete, accurate or reliable.</p> <p>Communicating /presentations With help record video for a range of purposes, paying attention to the quality of the video capture. Use email to email work completed in school to their teachers and peers. Insert sound recordings into a multi- media presentation. Choose images and download into a file. Create a stop motion animation using ICT software. Capture images using a variety of technology eg webcams, screen capture, scanning, visualizer and internet Can they transfer graphics from a range of sources and use them in a desktop publishing program</p>	<p>Create a database template.</p> <p>E-Safety Understand and articulate that social networking sites carry risk. Understand the benefit of developing a nickname for online use. Behave appropriately online. Recognise that cyber bullying is unacceptable. Recognise the dangers of communicating via a variety of devices such as Xbox live, PSP, phones etc. Explain the difference between online communication tools used in school and those used at home. Understand the need for caution when using the internet to search for images and what to do if they find an unsuitable image. Recognise that information on the internet may not be complete, accurate or reliable.</p> <p>Communicating / presentations Contribute to blog & wiki/forum etc. (linked to E safety) Independently record video for a range of purposes, paying attention to the quality of the video capture. Use email to email work completed in school to their teachers and peers. Insert sound recordings into a multi- media presentation. Choose images and download into a file. Create a stop motion animation using ICT software. Capture images using a variety of technology eg webcams, screen capture, scanning, visualizer and internet. Transfer graphics from a range of sources and use them in a desktop publishing program</p>
<p>Key Vocabulary</p>	<p>Key Vocabulary</p>	<p>Key Vocabulary</p>	<p>Key Vocabulary</p>
<p>log in, log out, username, password, my work, avatar, notification, topics, tools, save, sort, criteria, pictogram, data, collate instruction, computer, algorithm, debug, program, direction, change, arrow, undo, rewind, forward, backwards, right turn, left turn, animation, ebook, font, file, sound effect, display board, action, button, character, coding, code design, coder, collision, detection, command, object, input, design mode, properties, when clicked, when key, stop command,</p>	<p>action, algorithm, bug, character, code block, code design, command, debug, debugging, design mode, input, object, properties, repeat, scale, timer, when clicked, when, key, search, display board, internet, sharing, email, attachment, digital footprint, backspace key, copy and paste. columns, cells, count tool, delete key, equals tool, image toolbox, lock tool, move cell tools, rows, speak tool, spreadsheet, pictogram, question, data, collate, binary tree, avatar, database, internet, search, search engine, impressionism, pointillism, palette, share, surrealism, template, BMP, composition, digitally, instrument, music, sound, effects,</p>	<p>action, algorithm, bugm debug, debugging, code block, code design, command, design mode, event, input, output, if, repeat, object, properties, timer, computer simulation, selection, variable, password, internet, blog, concept map, username, website, webpage, spoof webpage, PEGI rating, <> = advanced mode, copy and paste, columns, cells, rows, delete key, equals tool, spin tool move cell tool, spreadsheet, posture, top row keys, home row keys, bottom row keys, space bar, communication, email, compose, send, cc, attachment, formatting report to teacher, password, address book, save to draft.</p>	<p>action, alert, algorithm, code design, control, command, debug, debugging, design mode, event, flow chart bug, get input, if, if/else. input, object, repeat, selection. computer simulation, simulation. timer, variable, computer virus, cookies, copyright, digital footprint, email, identity theft, malware, phishing, plagiarism, spam, average, advanced mde, copy and paste, columns, cells, rows, charts, equals tools, formula, formula wizard, move cell tool, random tool, spin tool, spreadsheet, timer, font, bold, italic, underline, logo. BK,FW, RT,LT, REPEAT, SETPC, SETPS,PU, PD, animation, background, frame, flipbook, onion skinning, play,</p>

<p>arrow keys, backspace key, cursor, columns, cells, clipart, count tool, delete, image tool, box, lock tool, move cell tool, speak tool, spreadsheet, rows, technology.</p>	<p>sound track, tempo, volume, concept map, quiz, presentation, node, animated, non-fiction, narrative, audience</p>	<p>branching database, data, database, questions, simulation, graph, field, bar graph, block graph, line graph, animation, audio, design templates, entrance animation, fint, media, presentation program, slide, slideshow, stock image, transition, text box, text formatting.</p>	<p>sound, video clip, Easter egg, internet, internet browser, search, search engine, spoof website, website, motherboard, CPU, RAM, graphics card, network card, monitor, speakers, keyboard, mouse, pitch, rhythm, pulse, tempo, dynamics, melody, rippler, house music, texture.</p>
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